

REMARKS

Claims 1-3, 5-12, and 14 remain in the application, and have not been further amended herein.

In the present office action, all claims have been rejected as being anticipated by U.S. Patent 6,031,864 to Bauchot. The Bauchot reference describes a system which includes different elements and operates under different principles than the present invention. As will be discussed in more detail below, many of the assumptions drawn in the office action are simply incorrect. Based on the differences which are discussed in more detail below, the rejection is traversed.

While a “frequency hopping system” is common between Bauchot and the claimed invention, the goals of Bauchot and the claimed invention and the means for achieving them are entirely different. The principle object of Bauchot is to provide a method and system for achieving a reliable and fast base selection in a radio communication system. Another object of Bauchot is to reduce the duration of synchronization acquisition while being adaptive to regulations on time occupancy of operating frequencies. In contrast, the claimed invention is aimed at combating the problem of interference in a frequency hopping communication system by making use of history information about communication over different frequencies, appropriate choice of slot size for next transmission, and the choice of the mobile device (slave) to which the base (master) has to communicate. The Bauchot patent does not disclose any means for combating interference (see Bauchot at col. 5 lines 47-49, where it is stated “The selection of signaling frequencies may be based on environment constraints such as interference management, but is not detailed here”).

Claim 1 of the present application requires “at least a second frequency selection unit interfaced with said processor to look ahead at frequencies that are to be used in future time slots”. This feature is wholly lacking from Bauchot.

All of the passages of Bauchot referenced in the office action with respect to this feature are not applicable as they do not show or discuss a second frequency selection unit which looks ahead at frequencies that are to be used in future time slots. SF_i is defined as the signaling frequency and F_i +1 is defined as

an operating frequency in Bauchot (see column 6). Figures 4a and 4b of Bauchot illustrate computation of the time occupancy on operating and signaling frequencies (see column 3, lines 27-28). In Bauchot, the base station selects a set of signaling frequencies within a plurality of operating frequencies, and there is added within each of the frequency hopping periods a plurality of signaling messages. Each signaling message is transmitted over a shared medium, such as a wireless radio frequency channel, at an assigned signaling frequency.

Computations are made for the duration of the plurality of signaling messages, and reduction of the time occupation of data and control messages transmissions is achieved by working towards equality between the time occupation of each operating frequency (see Summary). At no point does Bauchot show or discuss, how to control interference in a frequency hopping communication system, as is done in the present invention. Bauchot does not make use of history information about communication over different frequencies; rather, Bauchot is focused on reducing the duration of synchronization and making a quick base selection (neither of which employs historical information).

Claim 2 of the present invention is not anticipated for the same reasons as claim 1. As there is a second frequency hop selection unit in the claimed invention (which is lacking in Bauchot), the combinatorial logic units are distinctly different from any unit referenced in Bauchot. Further, the time slots in Bauchot can be of three types (A,B, or C) and the time frame durations can vary depending on the data transmitted. In contrast, in the claimed invention a duplex transmission between master and slave (base and mobile) is assumed with equal time duration for each time frame during which a single frequency is used. Therefore, the frequency hop selection is different from that of Bauchot.

With reference to claim 3 of the present application, as there is no second frequency selection unit in Bauchot, there is no cooperative operation involved between the processor in the master unit and a second frequency selection unit in Bauchot.

Claim 5 specifies a master unit having a plurality of link state counters C(i,j), wherein the condition of wireless links between the master unit and a slave unit are recorded in link state counters provided one for each frequency of

communication f, between the master and the slave “*i*”. Nowhere in Bauchot is there a mention of a plurality of link state counters C(i,j) and means of recording the states of wireless links between the master unit (base) and the slaves (mobiles) in link state counters which are provided one for each frequency of communication between the master and a slave. If the Examiner persists in this rejection, the Examiner is requested to identify by column and line number in Bauchot where the link state counters are discussed. All that the Examiner has referenced are mobile stations 10, 12, 14, and 16, and these stations are not described as having link state counters in Bauchot.

Claims 6 and 7 depend from claim 5 and are not anticipated for the same reasons. With respect to claim 6, the count variable I (col.8, line 46) in Bauchot is the index for a set of signaling frequencies, whereas the counter in the claimed invention is a link state counter associated with a frequency and a slave unit. A counter C(i,j) in the claimed invention is incremented when transmission/reception with reference to a frequency used for communication with a slave unit has failed. In contrast, the single count variable I is used in Bauchot to select a base corresponding to a signalling frequency. With respect to claim 7, nowhere in Bauchot is there any mention of transmission attempts to slave units based on a threshold value in a counter.

Claim 8, similar to claim 5 requires link state history counters. These elements are not shown in Bauchot. Furthermore, Bauchot does not describe any means for selection of mobile units (slave units) based on the values in link state history counters. Dependent claims 9 is distinguished from Bauchot for the same reasons.

Claims 10 and 11 require recording the number of successful receptions by using goodness counters GC(*i,j*) for every slave unit “*i*” with reference to frequency *f_j*. As discussed in detail above, Bauchot does not count receptions. The Examiner suggests that this is “inherently” done in Bauchot; however, this is simply not correct. If there is no counter for counting the information specified in the claim to be found in Bauchot, it does not inherently perform the function specified.

With respect to claim 12, as discussed above in conjunction with claim 1,

nowhere in Bauchot is there any mention of second level frequency look ahead to determine the slave units and packet sizes to be used during the next transmission period. Further, with reference to dependent claim 14, the expected states of wireless links with reference to interference is not involved in Bauchot as in the claimed invention, wherein by recording the result of transmission in link state history counters in the master unit or in goodness counters in slave units, the possibility of successful transmission on a frequency with reference to a slave unit is inferred and an appropriate slot size and slave unit is selected.

In view of the above differentiating features, it is very clear that none of the claims is anticipated by the embodiments of the Bauchot patent.

Reconsideration at an early date is requested.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephone or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041 (Whitham, Curtis & Christofferson).

Respectfully submitted,



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